IN THE CLAIMS:

The current claims follow. For claims not marked as amended in this response, any difference in the claims below and the previous state of the claims is unintentional and in the nature of a typographical error.

1. (Currently Amended) A method for determining feature data that represents information about the shape of an object ~~(o)~~, the object ~~(o)~~ being located in a k-dimensional space, the method comprising the steps of:

determining, by a computer, a partitioning scheme that defines a plurality of cells in the space in which the object is located such that at least some of the cells each contain a respective portion of the object, and

determining, by the computer, the feature data for the object on the basis of at least one property of the respective portions of the object that are contained in the plurality of cells, wherein at least two of the plurality of cells overlap each other at least in part.

2. (Previously Presented) The method of claim 1, characterized in that the plurality of cells comprises at least a first and a second group of cells such that the union of the cells in the first group of cells coincides with the union of the cells in the second group of cells, wherein each cell of the first group of cells overlaps at least in part with at least one respective cell of the second group of cells.

3. (Previously Presented) The method of claim 1 or claim 2, characterized in that the plurality of cells comprises at least a group of nested cells, wherein all cells of the group of nested cells are nested within each other.

4. (Currently Amended) The method of claim 3, characterized in that the cells of the group of nested cells form a sequence in which the k-dimensional volume of the respective portions of the object ~~(o)~~ that are contained in the cells of the group of nested cells increases in a substantially regular manner.

5. (Currently Amended) A method for determining feature data that represents information about the shape of an object, the object being located in a k-dimensional space, the method comprising the steps of:

determining a partitioning scheme that defines a plurality of cells in the space in which the object is located such that at least some of the cells each contain a respective portion of the object, and

determining the feature data for the object on the basis of at least one property of the respective portions of the object that are contained in the plurality of cells, wherein the partitioning scheme is determined such that at least some of the boundaries of the cells defined by the partitioning scheme are adapted to the individual shape of the object to delimit a plurality of regions in the space in which the object ~~(o)~~ is located such that the respective portions of the object that are contained in the plurality of regions are approximately equal to each other with respect to a predetermined measurement metric.

6. (Currently Amended) The method of claim 5 ~~or any of claims 1—4~~, characterized in that the plurality of cells comprises at least a first and a second group of cells such that the union of the cells in the first group of cells coincides with the union of the cells in the second group of cells, wherein each cell of the first group of cells overlaps at least in part with at least one respective cell of the second group of cells.

7. (Previously Presented) The method of claim 5 or claim 6, characterized in that at least one

region of the plurality of regions contains at least two cells of the plurality of cells that overlap each other at least in part.

8. (Previously Presented) The method of one of claims 5 - 7, characterized in that all regions of the plurality of regions are disjoint with respect to each other.

9. (Previously Presented) The method of one of claims 5 - 8, characterized in that the measurement metric, for each region of the plurality of regions, is the k-dimensional volume of the respective portion of the object contained in this region.

10. (Previously Presented) The method of one of claims 5 - 9, characterized in that each region of the plurality of regions corresponds to the union and/or difference and/or intersection of at least two cells of the plurality of cells or to exactly one cell of the plurality of cells.

11. (Previously Presented) The method of one of claims 5 - 10, characterized in that at least some of the regions of the plurality of regions represent k-dimensional spheres and/or k-dimensional shells and/or sectors of k-dimensional spheres and/or sectors of k-dimensional shells in the space in which the object is located.

12. (Previously Presented) The method of one of claims 1 - 11, characterized in that at least some of the cells defined by the partitioning scheme represent k-dimensional spheres and/or k-dimensional shells and/or sectors of k-dimensional spheres and/or sectors of k-dimensional shells in the space in which the object is located.

13. (Previously Presented) The method of one of claims 1 - 12, characterized in that the feature data for the object is determined on the basis of the k-dimensional volume of each respective

portion of the object contained in each cell of the plurality of cells and/or on the basis of data defining the k principal axes of each respective portion of the object contained in each cell of the plurality of cells.

14. (Previously Presented) The method of claim 1, wherein the determining steps are performed first for a first object and then also performed for a set of second objects to determine feature data for the first object and for each of the set of second objects, and further comprising performing a similarity search between the first object and the set of second objects based on a comparison of the determined feature data.

15. (Currently Amended) The method of claim 1, wherein the determining steps are performed to determine feature data for each object of a set of objects, and wherein the objects of the set of objects are grouped according to their respective similarities on the basis of a classification of the determined feature data.

16. (Previously Presented) A non-transitory computer-readable medium encoded with executable program instructions for execution by at least one processor, wherein the program instructions cause the at least one processor to perform a method according to one of claims 1 - 15.

17. (Previously Presented) Apparatus comprising at least one processor, wherein the apparatus is configured to perform a method according to one of claims 1 - 15.